

B. REMARKS

Upon entry of the amendment, claims 15, 18 to 22 and 44 to 46 will be pending. For the Examiner's convenience, a marked up version showing the amendments to the Title and the claims is attached as Exhibit A.

Applicants gratefully acknowledge the removal of the previous rejections of the claims under 35 U.S.C. § 101, and under 35 U.S.C. § 112, first paragraph.

A. Regarding the Amendments

The Title has been amended to more clearly reflect the subject matter claimed as the invention. As such, the amendment merely addresses a formality, and does not add new matter.

Claims 15 and 44 have been amended to more clearly indicate that the invention is directed to methods of detecting a liver cell sample (claim 15) and to methods of detecting GDF-12 expression in the liver of a subject. The amendments are as suggested by the Examiner, and are supported, for example, at page 27, lines 3-12, and Figure 1. As such, the amendments to claims 15 and 44 do not add new matter.

Claims 18 and 21 have been amended to correct an informality, wherein the term "detectable label" in dependent claims 19 and 22, respectively, lacked antecedent basis. As such, the amendment merely addresses a formality, and does not add new matter.

New claims 45 and 46 have been added. The new claims are supported, for example, at page 17, lines 23-27, and, therefore, do not add new matter.

B. Rejections under 35 U.S.C. § 112

The objection to the specification and corresponding rejection of claims 15, 18 to 22, and 44 under 35 U.S.C. § 112, first paragraph, as allegedly lacking enablement respectfully are traversed.

In re Application of
Lee and Esquela
Application No.: 09/361,655
Filed: July 27, 1999
Page 5

PATENT
Attorney Docket No.: JHU1220-4

It is acknowledged in the Office Action that the claims are enabling for detecting the presence of GDF-12 in a liver specimen, but alleged that the specification does not enable detecting any liver cell proliferative disorder as claimed. The claims have been amended to more clearly indicate that the methods of the invention are directed to detecting a liver cell sample by detecting GDF-12, and to detecting GDF-12 expression in the liver of a subject. In view of the amendments to the claims, and the acknowledgement in the Office Action that the specification enables detecting GDF-12 in a liver specimen, it is respectfully requested that this objection to the specification be withdrawn and that the corresponding rejection of the claims under 35 U.S.C. § 112, first paragraph, be removed.

The rejection of claims 15, 18 to 22, and 44 under 35 U.S.C. § 112, second paragraph, as allegedly vague and indefinite is respectfully traversed.

It is stated in the Office Action that the term "liver cell proliferative disorder" in claim 15 and "abnormal expression" in claim 44 are indefinite. These terms have been deleted from the claims and, therefore, it is submitted that these rejections are moot.

In view of the above remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect respectfully is requested. The Examiner is invited to contact Applicants' undersigned representative if there are any questions relating to this application.

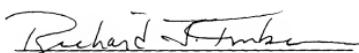
In re Application of
Lee and Esquela
Application No.: 09/361,655
Filed: July 27, 1999
Page 6

PATENT
Attorney Docket No.: JHU1220-4

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Respectfully submitted,

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In re Application of
Lee and Esquela
Application No.: 09/361,655
Filed: July 27, 1999
Exhibit A – Page 1



PATENT
Attorney Docket No.: JHU1220-4

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EXHIBIT A

MARKED UP VERSION OF TITLE AND CLAIMS SHOWING AMENDMENTS

The Title was amended as follows:

METHODS OF DETECTING LIVER CELLS EXPRESSING GROWTH

DIFFERENTIATION FACTOR-12 [A LIVER DISORDER] (Twice amended)

The claims were amended as follows:

15. (Four times amended) A method of detecting a liver cell sample [proliferative disorder], comprising

contacting an antibody that specifically binds to growth differentiation factor-12 (GDF-12) polypeptide having an amino acid sequence as set forth in SEQ ID NO:12 with a [liver] tissue specimen from a subject under conditions suitable for formation of a complex comprising the antibody and GDF-12; and

[comparing the amount of] identifying the formation of the complex in the [liver] specimen, thereby detecting [to the amount in a control sample, wherein a difference is indicative of] a liver cell sample [proliferative disorder].

18. (Twice amended) The method of claim 15, wherein the antibody further comprises a detectable label [is detectably labeled].

21. (Amended) The method of claim 20, wherein the antibody further comprises a detectable label [is detectably labeled].

44. (Amended) A method of detecting [abnormal] expression of growth differentiation factor-12 (GDF-12) in the liver of a subject, comprising

contacting an antibody that specifically binds to GDF-12 polypeptide having an amino acid sequence as set forth in SEQ ID NO:12 with a specimen from the subject; and

detecting specific binding of the antibody to GDF-12, [; and

comparing the amount of bound antibody in the specimen to the amount in a control specimen, wherein a difference is indicative of abnormal] thereby detecting GDF-12 expression in the liver of the subject.